

REMARKS

This amendment is filed concurrent with the filing of a Request for Continuing Examination (RCE) and in response to the final Official Action dated.

Claims 1-11 and 15-27 are pending in this application. Claims 5-11 and 25-27 have been withdrawn by the Examiner. Claims 5-11, 19, 20 and 23 are cancelled herein without prejudice or disclaimer, claims 28-31 are added and claims 1, 2, 3, 17, 18, 21, 22, 25 and 27 are amended herein.

Non-withdrawn claims 1-3 and 17 are independent. It is noted that withdrawn claims 25-27 depend from independent claim 17. Accordingly, it is understood that withdrawal of these claims will be reconsidered and the restriction of these claims removed, upon allowance of their parent claim 17.

Claims 1, 17-18 and 24 stand rejected under 35 U.S.C. §103(a) as obvious over JP 11293365, JP 51045528, JP 11293431, or JP 2000169918. Claims 1, 3, 17-18, 20, 22, and 24 stand further rejected under 35 U.S.C. §103(a) as obvious over JP 05051675. Claims 1-3 and 17-24 stand rejected under 35 U.S.C. §103(a) as obvious over JP 57070244 or DD 290501. Claims 4 and 15-16 stand rejected under 35 U.S.C. §103(a) as obvious over the references applied in support of the rejection of claims 1-3 and in further view of JP 61113740 and JP 02204919. The rejections are respectfully traversed.

Each of the rejected independent claims 1-3 and 17 requires high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass. Such an unavoidable impurity corresponds to a copper purity of 99.9999%. It is respectfully submitted that the applied prior art, whether taken individually or in any combination,

fails to teach or suggest a copper alloy wire formed of copper having such a purity level. The JP '740 reference, for example, discloses a maximum purity of 99.999%. It is respectfully submitted that none of the applied references disclose a copper alloy wire formed of copper having the required purity.

As discussed in a prior response, the applied '365, '528, '431, '918, '675, '244, '501, '740 and '919 references fail to disclose a purity of copper used as the mother on base material or the required purity of metal elements, such as Ag, Mg and In, combined therewith.

While it is acknowledged that the '365 and '918 references describe an unavoidable impurity contained in the copper alloy wire is a very small quantity of naturally contained impurity, these references lack any disclosure that the unavoidable impurity content of the copper used to form the wire is not more than 1 ppm by mass. Also lacking is any disclosure that silver, magnesium, and/or indium, with the recited purities and percentages by mass, are added to or combined with such high purity copper. In fact, the range of impurity content shown in the '365 and '918 references is within the conventional range.

Furthermore, all of the applied references fail to even recognize that the total impurity content will affect the wire drawability of a copper alloy wire.

Regarding the '740 reference, although the Examiner asserts that the abstract references 5N purity copper, it must be recognized that what is being described, in the '740 abstract, are the attributes of the copper alloy wire after other metal elements have been added or combined with the copper. On the other hand, the present invention explicitly limits the purity of the copper and metal element(s) added thereto or combined

therewith. Hence, the present invention, as claimed, defines purities of elements being combined to form the copper alloy wire.

The '740 reference lacks any discussion whatsoever of the mass or purities prior to the combination of the elements. Furthermore, the purity of the metal elements is not disclosed at all. Further still, the '740 reference fails to identify an impurity content by mass of the copper or a purity content in terms of percent by mass for the other metal elements identified. Additionally, the percent by mass of the other metal elements are, as understood, also outside the ranges specified for silver, magnesium and indium in the present claims.

Accordingly, each of the rejected claims is distinguishable on this basis.

However, to expedite allowance of this case, the transition language in each of the independent claims has been modified. Hence, the independent claims now recite a copper alloy wire formed by combining essentially only the high-purity copper with only the other explicitly recited element or elements. It should be noted that the applied JP '740 reference discloses a copper wire formed by a combination of 99.999% purity copper and at least one from the group of Ti, Cr, Mn, Fe, Ni, and Co, and at least one from the group of Zr, Np, Pd, Ag, In, and Sn. In the case of JP '740, this is required to provide required bonding characteristics, heat resistance and corrosion resistance.

Other amendments to the claims have been made solely for clarification or to correct editorial errors, and not for purposes of patentability.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed local

telephone number, in order to expedite resolution of any remaining issues and further to expedite passage of the application to issue, if any further comments, questions or suggestions arise in connection with the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 01-2135 and please credit any excess fees to such deposit account.

Respectfully Submitted,

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APPENDIX TO RESPONSE TO OFFICIAL ACTION DATED OCTOBER 23, 2002
AMENDMENTS TO CLAIMS
(DELETIONS IN BRACKETS AND ADDITIONS UNDERLINED)

1. (AMENDED) An ultrafine copper alloy wire with a diameter of not more than 0.08 mm, said ultrafine copper alloy wire being formed of a copper alloy wire [comprising] consisting essentially of:
high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass; and[,]
added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass.
2. (AMENDED) An ultrafine copper alloy wire with a diameter of not more than 0.08 mm, said ultrafine copper alloy wire being formed of a copper alloy wire [comprising] consisting essentially of:
high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass; and[,]
added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.5% by mass of magnesium having a purity of not less than 99.9% by mass.
3. (AMENDED) An ultrafine copper alloy wire with a diameter of not more than 0.08 mm, said ultrafine copper alloy wire being formed of a copper alloy wire

[comprising] consisting essentially of:

high-purity copper having a total unavoidable impurity content of not more than 1 ppm by mass; and[,]

added to the high-purity copper, 1.0 to 5.0% by mass of silver having a purity of not less than 99.99% by mass and 0.01 to 0.3% by mass of indium having a purity of not less than 99.99% by mass.

17. (AMENDED) A copper alloy wire having a diameter of not more than 0.08 mm, [comprising] consisting essentially of:

high-purity copper having a minimum 99.9999% purity; and
at least one of (i) 1.0% to 5.0% by mass of silver, and (ii) [0.1%] 0.01% to 0.5% by mass of magnesium [, and (iii)] or 0.01% to 0.3% by mass of indium metal combined with the high-purity copper[;]

[wherein prior to being combined, the high-purity copper has a total unavoidable impurity content of not more than 1.0 ppm by mass, the silver has a purity of not less than 99.99% by mass, the magnesium has a purity of not less than 99.9% by mass and the indium has a purity of not less than 99.99%].

18. (AMENDED) A copper alloy wire according to claim 17, wherein the at least one of (i) the silver, and (ii) the magnesium [and] or the indium is the 1.0% to 5.0% by mass of silver [having] and the silver has a purity of not less than 99.99% by mass.

21. (AMENDED) A copper alloy wire according to claim 17, wherein the at least

one of (i) the silver, and (ii) the magnesium [and] or the indium is the 1.0% to 5.0% by mass of silver [having] and the silver has a purity of not less than 99.99% by mass, and the [0.1%] 0.01% to 0.5% by mass of magnesium [having] and the magnesium has a purity of not less than 99.9% by mass.

22. (AMENDED) A copper alloy wire according to claim 17, wherein the at least one of (i) the silver, and (ii) the magnesium [and] or the indium is the 1.0% to 5.0% by mass of silver [having] and the silver has a purity of not less than 99.99% by mass, and the 0.01% to 0.3% by mass of indium [having] and the indium has a purity of not less than 99.99% by mass.

25. (AMENDED) A copper alloy wire according to claim 17, [wherein the copper alloy wire, and] further comprising:

a plurality of other copper alloy wires;

wherein, the copper wire and the plurality of other copper wires form a stranded copper alloy wire conductor.

27. (AMENDED) A copper alloy wire according to claim 26, wherein the stranded copper alloy wire conductor is the inner conductor of the extrafine coaxial cable, and further comprising:

a plurality of other copper alloy wire conductors;

wherein the plurality of other copper alloy wire conductors form outer conductors the extrafine coaxial cable.